CW#110: Linear vs. Nonlinear Functions   
Geometry

Tuesday April 12th, 2016

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

**Part 1: Solutions**

YWBAT figure out whether a given point is a solution to a linear function by defining what a solution is -- namely, an ordered pair that makes the function true.

A linear function has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ solutions.

However, this does \_\_\_\_\_\_\_\_\_ mean that any ordered pair will be a solution to a linear function.

The only points that are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a linear function are those that are

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, meaning they make the equation of the function \_\_\_\_\_\_\_\_\_\_.

Solutions to linear functions can be represented in \_\_\_\_ ways:

As \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

As a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

As a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| EXAMPLE 1  Determine which point is a solution the equation below.    A. (-3, 2)  B. (0, -4)  C. (6, 4) | EXAMPLE 2  Which are the coordinates of a point on the line with this equation?  (-10,3)  (-7,2)  (6,-1)  (7,-2) |
| EXAMPLE 3  Blank GridGive two solutions and two non-solutions to the line below.  Solutions Non-solutions | |

BRONZE

|  |  |
| --- | --- |
| Which are the coordinates of a point on the line with this equation?  (-4,-3)  (-3,11)  (1,-1)  (4,3) | 2. |
| 3. | 4. |
| 5. Name three solutions and three non-solutions to the graph shown below.  LinearEqu0526Solutions Non-solutions | |
| 6. Ms. Ramos graphed the function .  Which of the points on the graph below are on this line?    E and F  G and H  E and H  F and G | |

SILVER

|  |  |
| --- | --- |
| 7. | 8. |

**Part 2: Linear versus Nonlinear**

YWBAT determine if a function is linear or nonlinear given a data table or verbal description of the function.

YWBAT explain what makes a function linear.

Are all functions linear?

<https://www.ted.com/talks/sean_gourley_on_the_mathematics_of_war?language=en>

What makes a function linear?

Are these functions linear? Why or why not?

|  |  |
| --- | --- |
|  |  |

Linear and Nonlinear Relationships: Determine whether the relationships below are linear or nonlinear. Explain.

|  |  |
| --- | --- |
| The height of an object as it is falling from a plane over time | The height of a person climbing up a ladder over time |

More Tile Patterns: Are the tile patterns linear or nonlinear? Explain.

|  |  |
| --- | --- |
|  |  |

Linear or Nonlinear Data Tables: Determine whether each data table is linear or nonlinear. Justify your answer.

|  |  |
| --- | --- |
|  |  |

More Linear and Non-Linear Relationships: Determine which relationship in each pair is linear or nonlinear.

|  |  |
| --- | --- |
| If the radius of a cylinder is fixed, is the volume a linear or nonlinear function of the height? | If the height of a cylinder is fixed, is the volume a linear or nonlinear function of the radius? |
| If the volume of a cylinder is fixed, is the radius a linear or nonlinear function of the height? | If the volume of a cylinder is fixed, is the height a linear or nonlinear function of the radius? |

|  |  |
| --- | --- |
| The number of hours you work and the amount of your paycheck | The temperature of a cup of hot coffee while it sits on the table |
| The world’s population over time | The amount of time a trip takes you depending upon your speed |
| The height of a person over time | The weight of a person over time |

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Due: Thursday April 14th, 2016

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

Failure to show work will result in a LaSalle.

|  |  |
| --- | --- |
| 1. | 2. |

Which functions are linear? Explain.

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| --- | --- |
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